

VIII.3.3-API-MKC KANSAS CITY (MBRFC) API-RUNOFF OPERATION

Identifier: API-MKC

Operation Number: 29

Developed By: Missouri Basin River Forecast Center

Parameter Array: The FORTRAN identifier used for the parameter array is PO. The contents of the PO array are:

Position	Contents	Form
1	Version number for this operation	Integer
2-7	Runoff zone name	Real
8	Runoff zone number	Integer
9	User ID code	Real
10	API/AI relationship number	Integer
11	Future week number	Integer
12	AI adjustment factor (tenths)	Integer
13	Data time interval of rainfall/melt and runoff time series (HR)	Integer
14-15	Internal identifier of rainfall/melt time series	Real
16	Data type code of rainfall/melt time series	Real
17-18	Internal identifier of runoff time series	Real
19	Data type code of runoff time series	Real
20-21	Internal identifier of water equivalent time series	Real
22	Data type code of water equivalent time series	Real
23-28	Constants of API/AI relationship equations	Real
29-30	API recession factors for API/AI relationship	Real

<u>Position</u>	<u>Contents</u>	<u>Form</u>
31	Initial carryover input read/no read flag	Integer
32-33	Internal identifier of API time series	Real
34	Data type code of API time series	Real
35-36	Internal Identifier of AI time series	Real
37	Data type code of AI time series	Real
38-42	Unused	n/a

Carryover Array: The Fortran identifier used for the carryover array for this Operation is CO. The contents of the CO array are:

<u>Position</u>	<u>Contents</u>	<u>Form</u>
1	Storm period counter	Integer
2	Storm total rainfall/melt (hundredths of an inch)	Integer
3	Storm AI value, unadjusted (tenths)	Integer
4	Storm total runoff (hundredths of an inch)	Integer
5	Current API value (hundredths of an inch)	Integer
6	Current AI value, unadjusted (tenths)	Integer
7	Current water equivalent (hundredths of an inch)	Integer
8	24 hour rainfall/melt ending at 12Z (hundredths of an inch)	Integer

Subroutines Names and Functions: Subroutines associated with this Operation are:

<u>Subroutine</u>	<u>Function</u>
PIN29	Input cards and stores values in PO and CO arrays
MK6C29	Contain constants for Kansas City RFC
MS6C29	Contain constants for Minneapolis RFC
PRP29	Print information in PO array
PRC29	Print information in CO array

Subroutine Function

EX29	Execute the Operation
COX29	Perform carryover transfer
PUC29	Punch cards with information from PO and CO arrays which may be used by the PIN routine
TAB29	Make entry into Operations Table

Subroutines PIN29, PRP29, PRC29, COX29, and PUC29 have the standard argument lists for these routines as described in Section VIII.4.3.

SUBROUTINE EX29 (PO,CO,PX,RO,WE,CURAPI,CURAI)

Function: This is the execution subroutine for Operation API-MKC.

Argument List:

<u>Variable</u>	<u>Input/ Output</u>	<u>Type</u>	<u>Dimension</u>	<u>Description</u>
PO	Input	R*4	36	Contains parameters and other information
CO	Both	R*4	8	Contains carryover data
PX	Input	R*4	*	Rainfall/melt time series data
RO	Output	R*4	*	Runoff time series data
WE	Input	R*4	*	Water-equivalent time series data
CURAPI	Output	R*4	*	Current API time series
CURAI	Output	R*4	*	Current AI time series

SUBROUTINE TAB29 (TO,LEFT,IUSET,NXT,LPO,PO,LCO,TS,MTS,LWORK,IDT)

Function: This is the Operations Table entry subroutine for Operation API-MKC.

Argument List: The arguments for this subroutine are similar to the arguments for the Operations Table entry subroutines for other Operations. A description of the arguments is contained in section VIII.4.2-TAB.

Operation Table Array: The contents of the TO array are:

<u>Position</u>	<u>Contents</u>
1	Operation number
2	Location in the T array of the next operation to be executed
3	Location of the parameter array for the operation in the P array
4	Location of the carryover array for the operation in the C array
5	Location of rainfall/melt data in the D array
6	Location of water-equivalent data in the D array
7	Location to put runoff data in the D array
8	Location to put API data in the D array: 0 = no API output
9	Location to put AI data in the D array: 0 = no AI output